

## Section 1. Identification

**GHS product identifier** : Sulfuric Acid  
**Product code** : Not available.  
**Chemical name** : ☒ Hydrogen Sulfate  
**Other means of identification** : ☒ Sulphuric Acid, Oil of Vitriol  
**Product type** : Liquid.

### Relevant identified uses of the substance or mixture and uses advised against

**Product use** : Copper ore leaching, Manufacture of fertilizers and chemicals, Pickling and Water treatment  
**Area of application** : Industrial applications and Agriculture.  
**Supplier/Manufacturer** : ASARCO LLC  
 5285 E. Williams Circle, Suite 2000  
 Tucson, AZ 85711  
 Phone: (520) 798-7500  
**Emergency telephone number (with hours of operation)** : Chemtrec: (800) 424-9300

## Section 2. Hazards identification

**OSHA/HCS status** : This material is considered hazardous by the OSHA Hazard Communication Standard (29 CFR 1910.1200).  
**Classification of the substance or mixture** : H290 CORROSIVE TO METALS - Category 1  
 H314 SKIN CORROSION - Category 1A  
 H318 SERIOUS EYE DAMAGE - Category 1

### GHS label elements

**Hazard pictograms** :



**Signal word** :

**Hazard statements** : H290 - May be corrosive to metals.  
 H314 - Causes severe skin burns and eye damage.

### Precautionary statements

**Prevention** : P280 - Wear protective gloves. Wear eye or face protection. Wear protective clothing.  
 P234 - Keep only in original container.  
 P264 - Wash hands thoroughly after handling.

## Section 2. Hazards identification

<b>Response</b>	: P390 - Absorb spillage to prevent material damage. P304 + P340 + P310 - IF INHALED: Remove person to fresh air and keep comfortable for breathing. Immediately call a POISON CENTER or physician. P301 + P310 + P330 + P331 - IF SWALLOWED: Immediately call a POISON CENTER or physician. Rinse mouth. Do NOT induce vomiting. P303 + P361 + P353 + P363 + P310 - IF ON SKIN (or hair): Take off immediately all contaminated clothing. Rinse skin with water or shower. Wash contaminated clothing before reuse. Immediately call a POISON CENTER or physician. P305 + P351 + P338 + P310 - IF IN EYES: Rinse cautiously with water for several minutes. Remove contact lenses, if present and easy to do. Continue rinsing. Immediately call a POISON CENTER or physician.
<b>Storage</b>	: P405 - Store locked up. P406 - Store in a corrosion resistant container with a resistant inner liner.
<b>Disposal</b>	: P501 - Dispose of contents and container in accordance with all local, regional, national and international regulations.
<b>Supplemental label elements</b>	: Do not taste or swallow. Wash thoroughly after handling.
<b>Hazards not otherwise classified</b>	: Causes severe digestive tract burns.

## Section 3. Composition/information on ingredients

<b>Substance/mixture</b>	: Mixture
<b>Chemical name</b>	: <input checked="" type="checkbox"/> Hydrogen Sulfate
<b>Other means of identification</b>	: <input checked="" type="checkbox"/> Sulphuric Acid, Oil of Vitriol

Ingredient name	Other names	%	CAS number
Sulfuric acid	-	93 - 99	7664-93-9
Water	-	1 - 7	7732-18-5

Any concentration shown as a range is to protect confidentiality or is due to batch variation.

**There are no additional ingredients present which, within the current knowledge of the supplier and in the concentrations applicable, are classified as hazardous to health and hence require reporting in this section.**

## Section 4. First aid measures

### Description of necessary first aid measures

<b>Eye contact</b>	: Get medical attention immediately. Call a poison center or physician. Immediately flush eyes with plenty of water, occasionally lifting the upper and lower eyelids. Check for and remove any contact lenses. Continue to rinse for at least 10 minutes. Chemical burns must be treated promptly by a physician.
<b>Inhalation</b>	: Get medical attention immediately. Call a poison center or physician. Remove victim to fresh air and keep at rest in a position comfortable for breathing. If it is suspected that fumes are still present, the rescuer should wear an appropriate mask or self-contained breathing apparatus. If not breathing, if breathing is irregular or if respiratory arrest occurs, provide artificial respiration or oxygen by trained personnel. It may be dangerous to the person providing aid to give mouth-to-mouth resuscitation. If unconscious, place in recovery position and get medical attention immediately. Maintain an open airway. Loosen tight clothing such as a collar, tie, belt or waistband.

## Section 4. First aid measures

- Skin contact** : Get medical attention immediately. Call a poison center or physician. Wash contaminated skin with soap and water. Remove contaminated clothing and shoes. Wash contaminated clothing thoroughly with water before removing it, or wear gloves. Continue to rinse for at least 10 minutes. Chemical burns must be treated promptly by a physician. Wash clothing before reuse. Clean shoes thoroughly before reuse.
- Ingestion** : Get medical attention immediately. Call a poison center or physician. Wash out mouth with water. Remove dentures if any. Remove victim to fresh air and keep at rest in a position comfortable for breathing. If material has been swallowed and the exposed person is conscious, give small quantities of water to drink. Stop if the exposed person feels sick as vomiting may be dangerous. Do not induce vomiting unless directed to do so by medical personnel. If vomiting occurs, the head should be kept low so that vomit does not enter the lungs. Chemical burns must be treated promptly by a physician. Never give anything by mouth to an unconscious person. If unconscious, place in recovery position and get medical attention immediately. Maintain an open airway. Loosen tight clothing such as a collar, tie, belt or waistband.

### Most important symptoms/effects, acute and delayed

#### Potential acute health effects

- Eye contact** : Causes serious eye damage.
- Inhalation** : No known significant effects or critical hazards.
- Skin contact** : Causes severe burns.
- Ingestion** : Severely corrosive to the digestive tract. Causes severe burns.

#### Over-exposure signs/symptoms

- Eye contact** : Adverse symptoms may include the following:  
pain  
watering  
redness
- Inhalation** : No specific data.
- Skin contact** : Adverse symptoms may include the following:  
pain or irritation  
redness  
blistering may occur
- Ingestion** : Adverse symptoms may include the following:  
stomach pains

### Indication of immediate medical attention and special treatment needed, if necessary

- Notes to physician** : Treat symptomatically. Contact poison treatment specialist immediately if large quantities have been ingested or inhaled.
- Specific treatments** : No specific treatment.
- Protection of first-aiders** : No action shall be taken involving any personal risk or without suitable training. If it is suspected that fumes are still present, the rescuer should wear an appropriate mask or self-contained breathing apparatus. It may be dangerous to the person providing aid to give mouth-to-mouth resuscitation. Wash contaminated clothing thoroughly with water before removing it, or wear gloves.

See toxicological information (Section 11)

## Section 5. Fire-fighting measures

### Extinguishing media

**Suitable extinguishing media** : In case of fire, use dry chemical or carbon dioxide (CO<sub>2</sub>).

**Unsuitable extinguishing media** : Do not use water jet.

**Specific hazards arising from the chemical** : In a fire or if heated, a pressure increase will occur and the container may burst. Flammable and explosive hydrogen gas can be generated inside metal drums and storage tanks. Concentrated acid can ignite combustible materials on contact. Acid in contact with active metal can form explosive concentrations of hydrogen.

**Hazardous thermal decomposition products** : Decomposition products may include the following materials:  
sulfur oxides

**Special protective actions for fire-fighters** : Promptly isolate the scene by removing all persons from the vicinity of the incident if there is a fire. No action shall be taken involving any personal risk or without suitable training. At high temperatures, sulfuric acid or sulfur trioxide mists can be released from vented or ruptured containers. If water is added to concentrated sulfuric acid, violent spattering can occur and considerable heat may be evolved.

**Special protective equipment for fire-fighters** : Fire-fighters should wear appropriate protective equipment and self-contained breathing apparatus (SCBA) with a full face-piece operated in positive pressure mode.

## Section 6. Accidental release measures

### Personal precautions, protective equipment and emergency procedures

**For non-emergency personnel** : No action shall be taken involving any personal risk or without suitable training. Evacuate surrounding areas. Keep unnecessary and unprotected personnel from entering. Do not touch or walk through spilled material. Do not breathe vapor or mist. Provide adequate ventilation. Wear appropriate respirator when ventilation is inadequate. Put on appropriate personal protective equipment.

**For emergency responders** : If specialized clothing is required to deal with the spillage, take note of any information in Section 8 on suitable and unsuitable materials. See also the information in "For non-emergency personnel".

**Environmental precautions** : Avoid dispersal of spilled material and runoff and contact with soil, waterways, drains and sewers. Inform the relevant authorities if the product has caused environmental pollution (sewers, waterways, soil or air).

### Methods and materials for containment and cleaning up

**Small spill** : Stop leak if without risk. Move containers from spill area. Neutralize acids by applying basic substances (soda ash or lime) or use an acid spill kit. Absorb with an inert material and place in an appropriate waste disposal container. Dispose of via a licensed waste disposal contractor.

**Large spill** : Stop leak if without risk. Move containers from spill area. Absorb spillage to prevent material damage. Approach release from upwind. Prevent entry into sewers, water courses, basements or confined areas. Wash spillages into an effluent treatment plant or proceed as follows. Contain and collect spillage with non-combustible, absorbent material e.g. sand, earth, vermiculite or diatomaceous earth and place in container for disposal according to local regulations (see Section 13). The spilled material may be neutralized with sodium carbonate, sodium bicarbonate or sodium hydroxide. Dispose of via a licensed waste disposal contractor. Contaminated absorbent material may

## Section 6. Accidental release measures

pose the same hazard as the spilled product. Note: see Section 1 for emergency contact information and Section 13 for waste disposal.

## Section 7. Handling and storage

### Precautions for safe handling

- Protective measures** : Put on appropriate personal protective equipment (see Section 8). Do not get in eyes or on skin or clothing. Do not breathe vapor or mist. Do not ingest. If during normal use the material presents a respiratory hazard, use only with adequate ventilation or wear appropriate respirator. Keep in the original container or an approved alternative made from a compatible material, kept tightly closed when not in use. Keep away from alkalis. Empty containers retain product residue and can be hazardous. Do not reuse container. Absorb spillage to prevent material damage.
- Advice on general occupational hygiene** : Eating, drinking and smoking should be prohibited in areas where this material is handled, stored and processed. Workers should wash hands and face before eating, drinking and smoking. Remove contaminated clothing and protective equipment before entering eating areas. See also Section 8 for additional information on hygiene measures.
- Conditions for safe storage, including any incompatibilities** : Store in accordance with local regulations. Store in original container protected from direct sunlight in a dry, cool and well-ventilated area, away from incompatible materials (see Section 10) and food and drink. Store in a corrosion resistant container with a resistant inner liner. Store locked up. Separate from alkalis. Keep container tightly closed and sealed until ready for use. Containers that have been opened must be carefully resealed and kept upright to prevent leakage. Do not store in unlabeled containers. Use appropriate containment to avoid environmental contamination.

## Section 8. Exposure controls/personal protection

### Control parameters

#### Occupational exposure limits

Ingredient name	Exposure limits
Sulfuric acid	<b>NIOSH REL (United States, 10/2013).</b> TWA: 1 mg/m <sup>3</sup> 10 hours. <b>OSHA PEL (United States, 6/2016).</b> TWA: 1 mg/m <sup>3</sup> 8 hours. <b>ACGIH TLV (United States, 3/2016).</b> TWA: 0.2 mg/m <sup>3</sup> 8 hours. Form: Thoracic fraction

- Appropriate engineering controls** : If user operations generate dust, fumes, gas, vapor or mist, use process enclosures, local exhaust ventilation or other engineering controls to keep worker exposure to airborne contaminants below any recommended or statutory limits.
- Environmental exposure controls** : Emissions from ventilation or work process equipment should be checked to ensure they comply with the requirements of environmental protection legislation. In some cases, fume scrubbers, filters or engineering modifications to the process equipment will be necessary to reduce emissions to acceptable levels.

### Individual protection measures

## Section 8. Exposure controls/personal protection

- Hygiene measures** : Wash hands, forearms and face thoroughly after handling chemical products, before eating, smoking and using the lavatory and at the end of the working period. Appropriate techniques should be used to remove potentially contaminated clothing. Wash contaminated clothing before reusing. Ensure that eyewash stations and safety showers are close to the workstation location.
- Eye/face protection** : Safety eyewear complying with an approved standard should be used when a risk assessment indicates this is necessary to avoid exposure to liquid splashes, mists, gases or dusts. If contact is possible, the following protection should be worn, unless the assessment indicates a higher degree of protection: chemical splash goggles and/or face shield. If inhalation hazards exist, a full-face respirator may be required instead.
- Skin protection**
- Hand protection** : Chemical-resistant, impervious gloves complying with an approved standard should be worn at all times when handling chemical products if a risk assessment indicates this is necessary. Considering the parameters specified by the glove manufacturer, check during use that the gloves are still retaining their protective properties. It should be noted that the time to breakthrough for any glove material may be different for different glove manufacturers. In the case of mixtures, consisting of several substances, the protection time of the gloves cannot be accurately estimated. Recommended: Rubber gloves.
- Body protection** : Personal protective equipment for the body should be selected based on the task being performed and the risks involved and should be approved by a specialist before handling this product. Recommended: Rubber apron and rubber boots.
- Other skin protection** : Appropriate footwear and any additional skin protection measures should be selected based on the task being performed and the risks involved and should be approved by a specialist before handling this product.
- Respiratory protection** : Use a properly fitted, air-purifying or air-fed respirator complying with an approved standard if a risk assessment indicates this is necessary. Respirator selection must be based on known or anticipated exposure levels, the hazards of the product and the safe working limits of the selected respirator.

## Section 9. Physical and chemical properties

### Appearance

- Physical state** : Liquid. [Oily.]
- Color** : Colorless to light yellow. Clear to slightly hazy liquid.
- Odor** : Pungent.
- Odor threshold** : Approx. 1 mg/m<sup>3</sup>
- pH** : 0.9 [Conc. (% w/w): 1%]
- Melting point** : -29 to -1 °C (-20.2 to 30.2 °F)
- Boiling point** : 276 to 281 °C (528.8 to 537.8 °F)
- Flash point** : Not applicable.
- Evaporation rate** : Not applicable.
- Flammability (solid, gas)** : Not applicable.
- Lower and upper explosive (flammable) limits** : Not applicable.
- Vapor pressure** : 0.00067 kPa (0.005 mm Hg) [room temperature]
- Vapor density** : Not applicable.
- Relative density** : 1.835 to 1.844

## Section 9. Physical and chemical properties

Density	: <input checked="" type="checkbox"/> Not available.
Solubility	: Easily soluble in the following materials: cold water and hot water.
Solubility in water	: Soluble
Partition coefficient: n-octanol/water	: Not applicable.
Auto-ignition temperature	: Not applicable.
Decomposition temperature	: Not available.
SADT	: Not applicable.
Viscosity	: Not available.
Flow time (ISO 2431)	: <input checked="" type="checkbox"/> Not available.

## Section 10. Stability and reactivity

Reactivity	: Moderately reactive.
Chemical stability	: The product is stable.
Possibility of hazardous reactions	: Under normal conditions of storage and use, hazardous reactions will not occur. Under normal conditions of storage and use, hazardous polymerization will not occur.
Conditions to avoid	: Contact with water. Reaction is exothermic. Dilution should always be performed by adding the acid to the water rather than the water to the acid.
Incompatible materials	: Combustible material. Reacts violently with water. organic materials Carbides. Chlorates. Fulminates. Nitrates. Picrates. Metals. Sodium Carbonate. Sodium Hydroxide. Elemental Sodium. Potassium Permanganate. Ammonium hydroxide. Potassium Chlorate. Ethylene glycol. Aniline. Ethylene diamine. Flammable hydrogen gas may be produced on prolonged contact with metals such as aluminum, tin, lead and zinc.
Hazardous decomposition products	: Gaseous oxides of sulfur.

## Section 11. Toxicological information

### Information on toxicological effects

#### Acute toxicity

Product/ingredient name	Result	Species	Dose	Exposure
<input checked="" type="checkbox"/> Sulfuric acid	LD50 Oral	Rat	2140 mg/kg	-

#### Irritation/Corrosion

## Section 11. Toxicological information

Product/ingredient name	Result	Species	Score	Exposure	Observation
Sulfuric acid	Eyes - Severe irritant	Rabbit	-	250 Micrograms	-
	Eyes - Severe irritant	Rabbit	-	0.5 minutes 5 milligrams	-

### Sensitization

Not available.

### Mutagenicity

Conclusion/Summary : Not available.

### Carcinogenicity

Conclusion/Summary : Not available.

### Classification

Product/ingredient name	OSHA	IARC	NTP
Sulfuric acid mist	-	1	Known to be a human carcinogen.

### Reproductive toxicity

Conclusion/Summary : Not available.

### Teratogenicity

Conclusion/Summary : Not available.

### Specific target organ toxicity (single exposure)

Not available.

### Specific target organ toxicity (repeated exposure)

Not available.

### Aspiration hazard

Not available.

Information on the likely routes of exposure : Not available.

### Potential acute health effects

**Eye contact** : Causes serious eye damage.  
**Inhalation** : No known significant effects or critical hazards.  
**Skin contact** : Causes severe burns.  
**Ingestion** : Severely corrosive to the digestive tract. Causes severe burns.

### Symptoms related to the physical, chemical and toxicological characteristics

**Eye contact** : Adverse symptoms may include the following:  
     pain  
     watering  
     redness  
**Inhalation** : No specific data.  
**Skin contact** : Adverse symptoms may include the following:  
     pain or irritation  
     redness  
     blistering may occur



## Section 11. Toxicological information

**Ingestion** : Adverse symptoms may include the following:  
stomach pains

### Delayed and immediate effects and also chronic effects from short and long term exposure

#### Short term exposure

**Potential immediate effects** : Not available.

**Potential delayed effects** : Not available.

#### Long term exposure

**Potential immediate effects** : Not available.

**Potential delayed effects** : Not available.

#### Potential chronic health effects

Not available.

**General** : No known significant effects or critical hazards.

**Carcinogenicity** : Sulfuric acid mist: May cause cancer. Risk of cancer depends on duration and level of exposure. Exposure to an acid mist is not expected with the intended use of the product.

**Mutagenicity** : No known significant effects or critical hazards.

**Teratogenicity** : No known significant effects or critical hazards.

**Developmental effects** : No known significant effects or critical hazards.

**Fertility effects** : No known significant effects or critical hazards.

### Numerical measures of toxicity

#### Acute toxicity estimates

Route	ATE value
Oral	2161.6 mg/kg

## Section 12. Ecological information

### Toxicity

Product/ingredient name	Result	Species	Exposure
Sulfuric acid	Acute LC50 42500 µg/l Marine water	Crustaceans - Pandalus montagui - Adult	48 hours
	Acute LC50 42 ppm Fresh water	Fish - Gambusia affinis - Adult	96 hours

### Persistence and degradability

Not available.

### Bioaccumulative potential

Not available.

## Section 12. Ecological information

### Mobility in soil




Soil/water partition coefficient ( $K_{oc}$ ) : Not available.

Other adverse effects : No known significant effects or critical hazards.

## Section 13. Disposal considerations

**Disposal methods** : The generation of waste should be avoided or minimized wherever possible. Disposal of this product, solutions and any by-products should at all times comply with the requirements of environmental protection and waste disposal legislation and any regional local authority requirements. Dispose of surplus and non-recyclable products via a licensed waste disposal contractor. Waste should not be disposed of untreated to the sewer unless fully compliant with the requirements of all authorities with jurisdiction. This material and its container must be disposed of in a safe way. Care should be taken when handling emptied containers that have not been cleaned or rinsed out. Empty containers or liners may retain some product residues. Avoid dispersal of spilled material and runoff and contact with soil, waterways, drains and sewers.

## Section 14. Transport information

	DOT Classification	IMDG	IATA
UN number	UN1830	UN1830	UN1830
UN proper shipping name	Sulfuric acid	SULPHURIC ACID	Sulphuric acid
Transport hazard class(es)	8 	8 	8 
Packing group	II	II	II
Environmental hazards	No.	No.	No.
Additional information	<p><b>Reportable quantity</b> 1000 lbs / 453.59 kg Package sizes shipped in quantities less than the product reportable quantity are not subject to the RQ (reportable quantity) transportation requirements.</p> <p><b>Limited quantity</b> Yes.</p> <p><b>Packaging instruction</b> <b>Passenger aircraft</b> Quantity limitation: 1 L</p>	<p><b>Emergency schedules (EmS)</b> F-A, S-B</p>	<p><b>Passenger and Cargo Aircraft</b> Quantity limitation: 1 L Packaging instructions: 851 <b>Cargo Aircraft Only</b> Quantity limitation: 30 L Packaging instructions: 855 <b>Limited Quantities - Passenger Aircraft</b> Quantity limitation: 0.5 L Packaging instructions: Y840</p>

## Section 14. Transport information

	<b>Cargo aircraft</b> Quantity limitation: 30 L  <b>Special provisions</b> A3, A7, B3, B83, B84, IB2, N34, T8, TP2		
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**Special precautions for user** : **Transport within user's premises:** always transport in closed containers that are upright and secure. Ensure that persons transporting the product know what to do in the event of an accident or spillage.

**Transport in bulk according to Annex II of MARPOL and the IBC Code** : Not available.

## Section 15. Regulatory information

**U.S. Federal regulations** : **United States inventory (TSCA 8b):** All components are listed or exempted.  
☒ **Clean Water Act (CWA) 311:** Sulfuric acid

**Clean Air Act Section 112 (b) Hazardous Air Pollutants (HAPs)** : Not listed

**Clean Air Act Section 602 Class I Substances** : Not listed

**Clean Air Act Section 602 Class II Substances** : Not listed

**DEA List I Chemicals (Precursor Chemicals)** : Not listed

**DEA List II Chemicals (Essential Chemicals)** : Listed

### SARA 302/304

#### Composition/information on ingredients

Name	%	EHS	SARA 302 TPQ		SARA 304 RQ	
			(lbs)	(gallons)	(lbs)	(gallons)
<input checked="" type="checkbox"/> Sulfuric acid	93 - 99	Yes.	1000	66.3	1000	66.3

**SARA 304 RQ** : 1000 lbs / 453.6 kg

### SARA 311/312

**Classification** : Reactive  
Immediate (acute) health hazard

#### Composition/information on ingredients

Name	%	Fire hazard	Sudden release of pressure	Reactive	Immediate (acute) health hazard	Delayed (chronic) health hazard
<input checked="" type="checkbox"/> Sulfuric acid	93 - 99	No.	No.	No.	Yes.	Yes.

### SARA 313

## Section 15. Regulatory information

	Product name	CAS number	%
Form R - Reporting requirements	<input checked="" type="checkbox"/> Sulfuric acid mist	7664-93-9	93 - 99
Supplier notification	<input checked="" type="checkbox"/> Sulfuric acid	7664-93-9	93 - 99

SARA 313 notifications must not be detached from the SDS and any copying and redistribution of the SDS shall include copying and redistribution of the notice attached to copies of the SDS subsequently redistributed.

### State regulations

Massachusetts : The following components are listed: SULFURIC ACID  
 New York : The following components are listed: Sulfuric acid  
 New Jersey : The following components are listed: SULFURIC ACID; DIHYDROGEN SULFATE  
 Pennsylvania : The following components are listed: SULFURIC ACID

### California Prop. 65

**WARNING:** This product contains a chemical known to the State of California to cause cancer.

Ingredient name	Cancer	Reproductive	No significant risk level	Maximum acceptable dosage level
<input checked="" type="checkbox"/> Sulfuric acid mist	Yes.	No.	No.	No.

### International regulations

#### Chemical Weapon Convention List Schedules I, II & III Chemicals

Not listed.

#### Montreal Protocol (Annexes A, B, C, E)

Not listed.

#### Stockholm Convention on Persistent Organic Pollutants

Ingredient name	List name	Status
Not applicable.		

#### Rotterdam Convention on Prior Informed Consent (PIC)

Not listed.

#### UNECE Aarhus Protocol on POPs and Heavy Metals

Not listed.

## Section 16. Other information

### Hazardous Material Information System (U.S.A.)

Health	*	3
Flammability		0
Physical hazards		2

Caution: HMIS® ratings are based on a 0-4 rating scale, with 0 representing minimal hazards or risks, and 4 representing significant hazards or risks. Although HMIS® ratings are not required on SDSs under 29 CFR 1910.1200, the preparer may choose to provide them. HMIS® ratings are to be used with a fully implemented HMIS® program. HMIS® is a registered mark of the National Paint & Coatings Association (NPCA). HMIS® materials may be purchased exclusively from J. J. Keller (800) 327-6868.

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## Section 16. Other information

The customer is responsible for determining the PPE code for this material.

### National Fire Protection Association (U.S.A.)



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Copyright ©2001, National Fire Protection Association, Quincy, MA 02269. This warning system is intended to be interpreted and applied only by properly trained individuals to identify fire, health and reactivity hazards of chemicals. The user is referred to certain limited number of chemicals with recommended classifications in NFPA 49 and NFPA 325, which would be used as a guideline only. Whether the chemicals are classified by NFPA or not, anyone using the 704 systems to classify chemicals does so at their own risk.

### Procedure used to derive the classification

Classification	Justification
Met. Corr. 1, H290 Skin Corr. 1A, H314 Eye Dam. 1, H318	Expert judgment Calculation method Calculation method

### History

Date of issue/Date of revision	: 03/18/2017
Date of previous issue	: 08/11/2015
Version	: 2
Prepared by	: IHS
Key to abbreviations	: ATE = Acute Toxicity Estimate BCF = Bioconcentration Factor GHS = Globally Harmonized System of Classification and Labelling of Chemicals IATA = International Air Transport Association IBC = Intermediate Bulk Container IMDG = International Maritime Dangerous Goods LogPow = logarithm of the octanol/water partition coefficient MARPOL = International Convention for the Prevention of Pollution From Ships, 1973 as modified by the Protocol of 1978. ("Marpol" = marine pollution) UN = United Nations
References	: HCS (U.S.A.)- Hazard Communication Standard International transport regulations

▣ Indicates information that has changed from previously issued version.

### Notice to reader

To the best of our knowledge, the information contained herein is accurate. However, neither the above-named supplier, nor any of its subsidiaries, assumes any liability whatsoever for the accuracy or completeness of the information contained herein.

Final determination of suitability of any material is the sole responsibility of the user. All materials may present unknown hazards and should be used with caution. Although certain hazards are described herein, we cannot guarantee that these are the only hazards that exist.